

## **ATTACHMENT A**

### Clean Replacement/New Claims (entire set of pending claims)

*Following herewith is a clean copy of the entire set of pending claims.*

1. (AMENDED) An automated turnout control system for controlling the flow of water from a main channel to a turnout channel, said system comprising:  
    a flow measurement structure located in the turnout channel;  
    a water level sensor for measuring the water level at said flow measurement structure and for producing a corresponding output signal;  
    an adjustable flow control gate for controlling the flow of water into said turnout channel from said main channel;  
    a gate actuator for adjusting said flow control gate to an adjusted setting so as to control the flow of water therethrough;  
    a gate setting sensing means for sensing the adjusted setting and for producing a corresponding output signal; and  
    a controller, connected to said water level sensor, said gate setting sensing means and said gate actuator, for receiving said output signals from said water level sensor and said gate setting sensing means and for controlling said gate actuator to adjust the gate setting based on said output signals, said housing comprises a top portion, a bottom portion mechanically connected to the top portion, and a downwardly depending member connected to said bottom portion of said housing, and said sensor being received in said downwardly depending member.
2. The automated turnout control system of claim 1 wherein said gate comprises a movable gate member movable to a plurality of flow control positions including a fully open position wherein maximum flow is provided and a fully closed position wherein flow is stopped.
3. The automated turnout of claim 2 wherein said gate setting sensing means comprises a position sensor for sensing the position of said movable gate member.

6. The automated turnout of claim 1 wherein said controller comprises a central processing unit.

7. The automated turnout of claim 6 wherein said central processing unit uses a proportional integral algorithm in controlling said gate actuator.

8. The automated turnout of claim 7 wherein said central processing unit uses a closed loop control algorithm.